

10/031841
11/6

10 Recd PCT/US 23 DEC 2004

Docket No. KNI-004CPUS

1

SEQUENCE LISTING

<110> FRASER, DOUGLAS
ST. GALLAY, STEVEN

<120> HUMAN HOMOLOGUE OF BOVINE NEUROENDOCRINE SECRETORY PROTEIN,
NESP55, POLYNUCLEOTIDES AND USES THEREOF LINKED WITH OBESITY

<130> KNI-004CPUS

<140> 10/031,841
<141> 2002-01-22

<150> PCT/EP00/06921
<151> 2000-07-20

<150> GB 9917165.4
<151> 1999-07-22

<160> 17

<170> PatentIn 3.2

<210> 1
<211> 2235
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (3) ... (761)

<400> 1

ga att cgg ctc gag gtg cct aag agg atg gat cgg agg tcc cgg gct 47
Ile Arg Leu Glu Val Pro Lys Arg Met Asp Arg Arg Ser Arg Ala
1 5 10 15

cag cag tgg cgc cga gct cgc cat aat tac aac gac ctg tgc ccg ccc 95
Gln Gln Trp Arg Arg Ala Arg His Asn Tyr Asn Asp Leu Cys Pro Pro
20 25 30

ata ggc cgc cgg gca gcc acc gcg ctc ctc tgg ctc tcc tgc tcc atc 143
Ile Gly Arg Arg Ala Ala Thr Ala Leu Leu Trp Leu Ser Cys Ser Ile
35 40 45

gcg ctc ctc cgc gcc ctt gcc acc tcc aac gcc cgt gcc cag cag cgc 191
Ala Leu Leu Arg Ala Leu Ala Thr Ser Asn Ala Arg Ala Gln Gln Arg
50 55 60

gcg gct gcc caa cag cgc cgg agc ttc ctt aac gcc cac cac cgc tcc 239
Ala Ala Ala Gln Gln Arg Arg Ser Phe Leu Asn Ala His His Arg Ser
65 70 75

ggc gcc cag gta ttc cct gag tcc ccc gaa tcg gaa tct gac cac gag 287
Gly Ala Gln Val Phe Pro Glu Ser Pro Glu Ser Glu Ser Asp His Glu
80 85 90 95

cac gag gag gca gac ctt gag ctg tcc ctc ccc gag tgc cta gag tac 335
 His Glu Glu Ala Asp Leu Glu Leu Ser Leu Pro Glu Cys Leu Glu Tyr
 100 105 110

 gag gaa gag ttc gac tac gag acc gag agc gag acc gag tcc gaa atc 383
 Glu Glu Glu Phe Asp Tyr Glu Thr Glu Ser Glu Thr Glu Ser Glu Ile
 115 120 125

 gag tcc gag acc gac ttc gag acc gag cct gag acc gcc ccc acc act 431
 Glu Ser Glu Thr Asp Phe Glu Thr Glu Pro Glu Thr Ala Pro Thr Thr
 130 135 140

 gag ccc gag acc gag cct gaa gac gat cgc ggc ccg gtg gtg ccc aag 479
 Glu Pro Glu Thr Glu Pro Glu Asp Asp Arg Gly Pro Val Val Pro Lys
 145 150 155

 cac tcc acc ttc ggc cag tcc ctc acc cag cgt ctg cac gct ctc aag 527
 His Ser Thr Phe Gly Gln Ser Leu Thr Gln Arg Leu His Ala Leu Lys
 160 165 170 175

 ttg cga agc ccc gac gcc tcc cca agt cgc gcg ccg ccc agc act cag 575
 Leu Arg Ser Pro Asp Ala Ser Pro Ser Arg Ala Pro Pro Ser Thr Gln
 180 185 190

 gag ccc cag agc ccc agg gaa ggg gag gag ctc aag ccc gag gac aaa 623
 Glu Pro Gln Ser Pro Arg Glu Gly Glu Glu Leu Lys Pro Glu Asp Lys
 195 200 205

 gat cca agg gac ccc gaa gag tcg aag gag ccc aag gag gag aag cag 671
 Asp Pro Arg Asp Pro Glu Glu Ser Lys Glu Pro Lys Glu Glu Lys Gln
 210 215 220

 cgg cgt cgc tgc aag cca aag aag ccc acc cgc cgt gac gcg tcc ccg 719
 Arg Arg Arg Cys Lys Pro Lys Pro Thr Arg Arg Asp Ala Ser Pro
 225 230 235

 gag tcc cct tcc aaa aag gga ccc atc ccc atc cgg cgt cac 761
 Glu Ser Pro Ser Lys Lys Gly Pro Ile Pro Ile Arg Arg His
 240 245 250

 taatggagga cgccgtccag attctcccttg ttttcatgga ttcatggct ggagaatctg 821
 gtaaaaagcac cattgtgaag cagatggagga tcctgcattt taatgggttt aatggagagg 881
 gccccgaaaga ggaccggcag gctgcaagga gcaacagcga tggtagaaag gcaaccaaag 941
 tgcaggacat caaaaacaac ctgaaagagg cgattgaaac cattgtggcc gccatgagca 1001
 acctggtggcc cccctggag ctggccaaacc ccgagaaccca gttcagagtg gactacattc 1061
 tgagtgttat gaacgtgcct gactttgact tcctcccgat attctatgat catgccaagg 1121
 ctctgtggga ggatgaagga gtgcgtgcct gctacgaacg ctccaaacgag taccagctga 1181
 ttgactgtgc ccagtaacttc ctggacaaga tgcacgttat caagcaggct gactatgtgc 1241
 cgagcgatca ggacctgctt cgctggctg tcctgacttc tggaaatctt gagaccaagt 1301
 tccaggttggaa caaatgttccatgt ttgacgtgggg tggccagcgc gatgaacgccc 1361
 gcaagtggat ccagtgcctt aacgtatgtca ctggccatcat ctgcgtgggt gccagcagca 1421
 gctacaacat ggtcatccgg gaggacaacc agaccaaccc cttgcaggag gctctgaacc 1481
 tcttcaagag catctggaaac aacatgttgc tgccacatcat ctctgttatc ctgttccctca 1541
 acaagcaaga tctgtcgat gagaaatgtt ttgttggggaa atcgaagatt gaggactact 1601
 ttccagaatt tgctcgctac actactccctg aggatgttac tcccgagccc ggagaggacc 1661
 cacgcgtgac ccggggccaaag tacttcattt gatgttgcgtt tctgaggatc agcaactgcca 1721
 gtggagatgg gcgtcaactac tgcttccctt atttcacccgt cgctgtggac actggagaaca 1781
 tccggccgtgtt gttcaacgcg tgccgtgaca tcatttcacccgt cgctgtggac 1841

agctgctcta agaaggaaac ccccaaattt aattaaagcc ttaagcacaa ttaattaaaa 1901
 gtgaaacgta attgtacaag cagttaatca cccaccatag ggcatgatta acaaagcaac 1961
 ctttccttc ccccgagtga ttttgcggaaa cccctttc ctttcagctt gcttagatgt 2021
 tccaaattha gaaagcttaa ggccgcctac agaaaaaggaa aaaaaggcca caaaaggttcc 2081
 ctctcactt cagtaaaaat aaataaaaca gcagcagcaa acaaataaaa tgaaataaaa 2141
 gaaacaatg aaataaaat tttgttggtc agcattaaaa aaaatcaaaa taaaattaa 2201
 atgtgagcaa aaaaaaaaaa aaaaggcgcc 2235

<210> 2
 <211> 253
 <212> PRT
 <213> Homo sapiens

<400> 2
 Ile Arg Leu Glu Val Pro Lys Arg Met Asp Arg Arg Ser Arg Ala Gln
 1 5 10 15
 Gln Trp Arg Arg Ala Arg His Asn Tyr Asn Asp Leu Cys Pro Pro Ile
 20 25 30
 Gly Arg Arg Ala Ala Thr Ala Leu Leu Trp Leu Ser Cys Ser Ile Ala
 35 40 45
 Leu Leu Arg Ala Leu Ala Thr Ser Asn Ala Arg Ala Gln Gln Arg Ala
 50 55 60
 Ala Ala Gln Gln Arg Arg Ser Phe Leu Asn Ala His His Arg Ser Gly
 65 70 75 80
 Ala Gln Val Phe Pro Glu Ser Pro Glu Ser Glu Ser Asp His Glu His
 85 90 95
 Glu Glu Ala Asp Leu Glu Leu Ser Leu Pro Glu Cys Leu Glu Tyr Glu
 100 105 110
 Glu Glu Phe Asp Tyr Glu Thr Glu Ser Glu Thr Glu Ser Glu Ile Glu
 115 120 125
 Ser Glu Thr Asp Phe Glu Thr Glu Pro Glu Thr Ala Pro Thr Thr Glu
 130 135 140
 Pro Glu Thr Glu Pro Glu Asp Asp Arg Gly Pro Val Val Pro Lys His
 145 150 155 160
 Ser Thr Phe Gly Gln Ser Leu Thr Gln Arg Leu His Ala Leu Lys Leu
 165 170 175
 Arg Ser Pro Asp Ala Ser Pro Ser Arg Ala Pro Pro Ser Thr Gln Glu
 180 185 190
 Pro Gln Ser Pro Arg Glu Gly Glu Glu Leu Lys Pro Glu Asp Lys Asp
 195 200 205
 Pro Arg Asp Pro Glu Glu Ser Lys Glu Pro Lys Glu Glu Lys Gln Arg
 210 215 220
 Arg Arg Cys Lys Pro Lys Lys Pro Thr Arg Arg Asp Ala Ser Pro Glu
 225 230 235 240

Ser Pro Ser Lys Lys Gly Pro Ile Pro Ile Arg Arg His
245 250

<210> 3
<211> 4
<212> PRT
<213> Bovine Sp.

<400> 3
Leu Ser Ala Leu
1

<210> 4
<211> 8
<212> PRT
<213> Bovine Sp.

<400> 4
Gly Ala Ile Pro Ile Arg Arg His
1 5

<210> 5
<211> 4
<212> PRT
<213> Homo sapiens

<400> 5
Leu His Ala Leu
1

<210> 6
<211> 8
<212> PRT
<213> Homo sapiens

<400> 6
Gly Pro Ile Pro Ile Arg Arg His
1 5

<210> 7
<211> 4
<212> PRT
<213> Homo sapiens

<400> 7
Ser Phe Leu Asn
1

<210> 8
<211> 4
<212> PRT

<213> Homo sapiens

<400> 8
Pro Ser Lys Lys
1

<210> 9
<211> 4
<212> PRT
<213> Homo sapiens

<400> 9
Met Asp Arg Arg
1

<210> 10
<211> 4
<212> PRT
<213> Homo sapiens

<400> 10
Ala Thr Ala Leu
1

<210> 11
<211> 64
<212> PRT
<213> Homo sapiens

<220>
<221> MOD_RES
<222> (1)..(30)
<223> any amino acid, which may or may not be present

<220>
<221> MOD_RES
<222> (35)..(64)
<223> any amino acid, which may or may not be present

<400> 11
Xaa
1 5 10 15

Xaa Leu His
20 25 30

Ala Leu Xaa
35 40 45

Xaa
50 55 60

<210> 12
<211> 68

<212> PRT
<213> Homo sapiens

<220>
<221> MOD_RES
<222> (1)..(30)
<223> any amino acid, which may or may not be present

<220>
<221> MOD_RES
<222> (39)..(68)
<223> any amino acid, which may or may not be present

<400> 12
Xaa
1 5 10 15

Xaa Gly Pro
20 25 30

Ile Pro Ile Arg Arg His Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45

Xaa
50 55 60

Xaa Xaa Xaa Xaa
65

<210> 13
<211> 11
<212> PRT
<213> Homo sapiens

<400> 13
Gln Arg Leu His Ala Leu Lys Leu Arg Ser Pro
1 5 10

<210> 14
<211> 11
<212> PRT
<213> Bovine Sp.

<400> 14
Glu Arg Leu Ser Ala Leu Arg Leu Arg Ser Pro
1 5 10

<210> 15
<211> 241
<212> PRT
<213> Bovine sp.

<400> 15
 Met Asp Arg Arg Ser Arg Pro Gln Leu Gly Arg Arg Ala Arg His Asn
 1 5 10 15

 Tyr Asn Asp Leu Cys Pro Pro Ile Gly Arg Arg Ala Ala Thr Ala Leu
 20 25 30

 Leu Trp Leu Ser Cys Ser Ile Ala Leu Leu Arg Ala Leu Ala Thr Ser
 35 40 45

 Ser Thr Arg Ala Gln Gln Arg Ala Ala Gln Arg Arg Thr Phe Leu
 50 55 60

 Asn Ala His His Arg Ser Ala Ala Gln Val Phe Pro Glu Pro Pro Glu
 65 70 75 80

 Ser Asp His Glu Asp Thr Asp Phe Glu Pro Ser Leu Pro Glu Cys Pro
 85 90 95

 Glu Tyr Gln Glu Glu Glu Phe Asp Tyr Glu Ser Glu Thr Glu Ser Glu
 100 105 110

 Ser Glu Ile Glu Ser Glu Thr Glu Phe Glu Thr Glu Ser Asp Thr Ala
 115 120 125

 Pro Thr Thr Glu Pro Glu Thr Glu Pro Glu Asp Glu Pro Gly Pro Val
 130 135 140

 Val Pro Lys Arg Pro Thr Phe His Gln Ser Leu Thr Glu Arg Leu Ser
 145 150 155 160

 Ala Leu Arg Leu Arg Ser Pro Asp Ala Ser Pro Ser Arg Ala Pro Pro
 165 170 175

 Ser Thr Gln Glu Ser Glu Ser Pro Arg Gln Gly Glu Glu Pro Glu Asp
 180 185 190

 Lys Asp Pro Arg Asp Pro Glu Glu Ser Glu Glu Pro Lys Glu Glu Glu
 195 200 205

 Lys Gln Gln Gln His Arg Cys Lys Pro Lys Lys Pro Thr Arg Arg Asp
 210 215 220

 Pro Ser Pro Glu Ser Pro Ser Lys Arg Gly Ala Ile Pro Ile Arg Arg
 225 230 235 240

 His

<210> 16
 <211> 256
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Consensus
 Sequence

```
<220>
<221> MOD_RES
<222> (1)..(8)
<223> any amino acid

<220>
<221> MOD_RES
<222> (15)
<223> any amino acid

<220>
<221> MOD_RES
<222> (17)..(18)
<223> any amino acid

<220>
<221> MOD_RES
<222> (57)..(58)
<223> any amino acid

<220>
<221> MOD_RES
<222> (68)
<223> any amino acid

<220>
<221> MOD_RES
<222> (71)
<223> any amino acid

<220>
<221> MOD_RES
<222> (80)
<223> any amino acid

<220>
<221> MOD_RES
<222> (87)
<223> any amino acid

<220>
<221> MOD_RES
<222> (91)..(95)
<223> any amino acid

<220>
<221> MOD_RES
<222> (98)..(99)
<223> any amino acid

<220>
<221> MOD_RES
<222> (101)
<223> any amino acid

<220>
<221> MOD_RES
```

```
<222> (103)
<223> any amino acid

<220>
<221> MOD_RES
<222> (109)
<223> any amino acid

<220>
<221> MOD_RES
<222> (112)
<223> any amino acid

<220>
<221> MOD_RES
<222> (120)
<223> any amino acid

<220>
<221> MOD_RES
<222> (122)
<223> any amino acid

<220>
<221> MOD_RES
<222> (124)
<223> any amino acid

<220>
<221> MOD_RES
<222> (133)
<223> any amino acid

<220>
<221> MOD_RES
<222> (138)..(139)
<223> any amino acid

<220>
<221> MOD_RES
<222> (153)..(154)
<223> any amino acid

<220>
<221> MOD_RES
<222> (161)..(162)
<223> any amino acid

<220>
<221> MOD_RES
<222> (165)
<223> any amino acid

<220>
<221> MOD_RES
<222> (173)
<223> any amino acid
```

```
<220>
<221> MOD_RES
<222> (176)
<223> any amino acid

<220>
<221> MOD_RES
<222> (194)
<223> any amino acid

<220>
<221> MOD_RES
<222> (202)..(204)
<223> any amino acid

<220>
<221> MOD_RES
<222> (217)
<223> any amino acid

<220>
<221> MOD_RES
<222> (223)..(225)
<223> any amino acid

<220>
<221> MOD_RES
<222> (227)..(228)
<223> any amino acid

<220>
<221> MOD_RES
<222> (240)
<223> any amino acid

<220>
<221> MOD_RES
<222> (248)
<223> any amino acid

<220>
<221> MOD_RES
<222> (250)
<223> any amino acid

<400> 16
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Met Asp Arg Arg Ser Arg Xaa Gln
      1           5           10          15

Xaa Xaa Arg Arg Ala Arg His Asn Tyr Asn Asp Leu Cys Pro Pro Ile
      20          25          30

Gly Arg Arg Ala Ala Thr Ala Leu Leu Trp Leu Ser Cys Ser Ile Ala
      35          40          45

Leu Leu Arg Ala Leu Ala Thr Ser Xaa Xaa Arg Ala Gln Gln Arg Ala
      50          55          60
```

11

Ala Ala Gln Xaa Arg Arg Xaa Phe Leu Asn Ala His His Arg Ser Xaa
 65 70 75 80

 Ala Gln Val Phe Pro Glu Xaa Pro Glu Ser Xaa Xaa Xaa Xaa His
 85 90 95

 Glu Xaa Xaa Asp Xaa Glu Xaa Ser Leu Pro Glu Cys Xaa Glu Tyr Xaa
 100 105 110

 Glu Glu Glu Phe Asp Tyr Glu Xaa Glu Xaa Glu Xaa Glu Ser Glu Ile
 115 120 125

 Glu Ser Glu Thr Xaa Phe Glu Thr Glu Xaa Xaa Thr Ala Pro Thr Thr
 130 135 140

 Glu Pro Glu Thr Glu Pro Glu Asp Xaa Xaa Gly Pro Val Val Pro Lys
 145 150 155 160

 Xaa Xaa Thr Phe Xaa Gln Ser Leu Thr Glx Arg Leu Xaa Ala Leu Xaa
 165 170 175

 Leu Arg Ser Pro Asp Ala Ser Pro Ser Arg Ala Pro Pro Ser Thr Gln
 180 185 190

 Glu Xaa Glx Ser Pro Arg Glx Gly Glu Xaa Xaa Xaa Pro Glu Asp Lys
 195 200 205

 Asp Pro Arg Asp Pro Glu Glu Ser Xaa Glu Pro Lys Glu Glu Xaa Xaa
 210 215 220

 Xaa Gln Xaa Xaa Arg Cys Lys Pro Lys Lys Pro Thr Arg Arg Asp Xaa
 225 230 235 240

 Ser Pro Glu Ser Pro Ser Lys Xaa Gly Xaa Ile Pro Ile Arg Arg His
 245 250 255

<210> 17

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic 6-His tag

<400> 17

His His His His His